

behaviors, medication adherence, clinical factors, and quality of care. Cross-product terms were specified to evaluate differential effectiveness for subjects with differing clinical conditions including renal insufficiency based on GFR, obesity, longer duration of diabetes, and older age. **RESULTS:** A1C was lowered by 1.14 points (95%CI: 1.11–1.17) within one year after initiating new therapy, but only 30.2% (95%CI: 29.2–31.1%) achieved target (A1C < 7%). Mean A1C was 9.01 (8.98–9.04) prior to initiation and 7.87 (7.85–7.90) at 3–12 months after baseline. While baseline disease severity differed across initiators of each therapeutic class, there were no statistically significant differences in glycemic lowering across classes, or across clinical conditions. **CONCLUSIONS:** Therapy initiation resulted in an impressive population-level benefit, similar in magnitude to that reported in randomized trials. Nonetheless, most patients failed to achieve glycemic targets after initiation possibly because providers had delayed intensification or patients failed to fill earlier prescriptions until they had advanced to very poor control. While no population-level differences in response by therapy were detected, in any one patient, differential response by class can not be excluded. The substantial glycemic response following initiation suggests that providers are probably choosing therapies for intensification wisely, but that earlier addition of a new agent may be beneficial.

DB4

SELF MONITORING OF BLOOD GLUCOSE IN PATIENTS WITH TYPE 2 DIABETES: COST UTILITY ANALYSIS IN A UNITED STATES THIRD-PARTY PAYER SETTING

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OBJECTIVES: Previous studies have shown that for patients with type 2 diabetes, self monitoring of blood glucose (SMBG) can improve glycemic control (with HbA1c improvements of 0.3–0.6%, depending on treatment received). This in turn, can reduce risks of disease complications. Because monitoring supplies can have high acquisition costs, country-specific evaluations of SMBG cost-effectiveness are needed. The aim of this analysis was to estimate, within a US setting, the cost-effectiveness of using SMBG. **METHODS:** A validated, published model for type 2 diabetes (The CORE Diabetes Model) was used to project improvements in quality-adjusted life expectancy (QALE), long-term costs and cost-effectiveness of SMBG. A series of Markov models simulated the progression of diabetes-related complications (cardiovascular, neuropathy, renal and eye disease). Transition probabilities and HbA1c-dependent adjustments came from major epidemiological studies. Costs of complications were derived from published sources. From a US third party payer perspective, direct costs of diabetes complications and of SMBG were projected over patient lifetimes. Outcomes were discounted at 3% annually. **RESULTS:** Depending on type of treatment (diet/exercise, oral medications, or insulin), greater glycemic control with SMBG improved (discounted) QALE by 0.13 to 0.32 QALYs and increased total costs by \$2089 to \$4661 per patient. The resulting incremental cost-effectiveness ratios ranged from \$13,848 to \$35,880 per QALY gained, and were well within current willingness-to-pay limits. SMBG was most cost-effective in patients being treated with oral antidiabetic medication, and those being treated with insulin therapy. **CONCLUSIONS:** Within the three treatment regimens examined, the addition of SMBG was associated with increased glycemic control and with improved clinical and economic long-term outcomes. The incremental cost-effectiveness ratios were of magnitudes typically considered to indicate good value for money. Additional comparative studies are needed to further assess Util-

ities and other standard outcomes associated with SMBG in patients with type 2 diabetes.

ECONOMIC STUDIES I

ESI

COST-UTILITY ANALYSES OF NEW MEDICAL TECHNOLOGIES: OFTEN COST-EFFECTIVE, SOMETIMES COST-INEFFECTIVE, DOMINANT, OR DOMINATED, BUT ALMOST NEVER “DECREMENTALLY” COST-EFFECTIVE

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OBJECTIVES: Technological innovations may be cost-increasing and quality-improving (CIQI), cost-saving and quality-improving (dominant), cost-increasing and quality-decreasing (dominated), or cost-saving and quality-decreasing (CSQD). We endeavored to determine how cost-utility analyses of new medical technologies are distributed across these categories. **METHODS:** We systematically searched computerized databases including MEDLINE, HealthSTAR, CancerLit, Current Contents and EconLit to identify cost-utility analyses published in 2002 to 2003. Trained auditors summarized each study using standardized forms. All costs were converted to 2002 US dollars. **RESULTS:** We identified 640 separate published cost utility analyses. These papers compared 657 interventions against a standard. Of analyzed interventions, 79.0% (519) were CIQI, 13.5% (89) were dominant, 6.7% (44) were dominated, but only 0.8% (5) were CSQD. Among CIQI interventions, 64.6% (335) had a cost-effectiveness ratio (CER) below \$50,000 per QALY and 79.0% (410) had a CER below \$100,000 per QALY. Among CSQD interventions, 60% (3) had a CER below \$50,000 per QALY and 2 had a CER above \$100,000 per QALY. **CONCLUSIONS:** Most published cost-utility analyses are performed on CIQI technologies, and most of these have a CER below conventionally accepted thresholds. Cost-utility analyses of CSQD technologies are extremely rare.

ES2

DIRECT MEDICAL COSTS OF SOLID ORGAN TRANSPLANT IN BRITISH COLUMBIA, CANADA

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OBJECTIVE: Solid organ transplants are among the most resource intensive of treatments. There exists only limited knowledge of the current costs of solid organ transplants in Canada because existing studies were derived from single centres, included different resource categories, covered different time periods, and used different cost methodologies. The purpose study was to derive population-based estimates of the direct medical costs of kidney, liver, lung and heart transplants in British Columbia (BC), Canada, from 1995 to 2003. **METHODS:** Province wide resource utilization data were extracted from the BC Transplant Society. This population-based registry includes records of all persons undergoing solid organ transplantation in BC. Unit cost data were obtained from publicly available sources. Health resources categories included inpatient hospital stays, outpatient visits, physician fees, laboratory and diagnostic tests and immunosuppressant medications. Mean (standard deviation (SD)) costs were derived separately for the transplant pro-